Amendments to the Specification:

Please insert the following paragraph after the title on page 1, line 1:

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority to International Application No. PCT/FR03/01769, filed June 12, 2003, and published as WO 03/107261 A2, which in turn, claims priority to French patent No. FR2841022, filed June 12, 2002.

Please insert the before the first paragraph beginning with the phrase "The present invention relates to" on page 1, line 4:

BACKGROUND OF THE INVENTION

a) Field of the invention

Please insert the following text immediately before the second paragraph beginning on page 1, line 8, which starts with the phrase "More particularly":

b) State of the art

Please insert the following text after first full paragraph and before the second full paragraph beginning on page 2, line 8, that starts with the phrase "For this purpose":

SUMMARY OF THE INVENTION

Kaw 1/11/08

Please replace the paragraph beginning on page 2, line ~~32~~ 31 with the following amended paragraph:

In preferred embodiments of the invention, one and/or other of the following arrangements may also be used where appropriate:

- the theoretical resemblance values are a function of the position of the impact on the surface, determined in advance for each possible set of reference active zones;
- the active zone is identified by comparison between the phase of the predetermined signals Ri(t) and of the sensed signal;
- during the learning phase, a computation is made of the Fourier transform $R_i(\omega)=|R_i(\omega)| \bullet e^{j\,\varphi i(\omega)}$ of each acoustic signal $R_i(t)$ generated by an impact on the active zone i, where i is an index lying between 1 and n, and from this Fourier transform only the phase component $e^{j\,\varphi i(\omega)}$ is retained, only in the frequency bands ω in which the amplitude $|R_i(\omega)|$ is greater than a predetermined threshold, then the same process is applied to each sensed acoustic signal S(t) during the normal operation of the device;
- the predetermined threshold is equal to the maximum of MAX/D and $|B(\omega)|$, where:
- MAX is chosen from the maximal value of the modules $|R_i(\omega)|$, the maximal value of the modules $|R_i(\omega)|$ each normalized in energy, and the maximal value of the envelope of the average of the modules $|R_i(\omega)|$ each normalized in energy,
- D is a constant,
- $|B(\omega)|$ is the average of several noise spectra in the object forming an acoustic interface, acquired at different times;
- during the normal operation of the device:
- a product $P_i(\omega)$ is computed equal to $S'(\omega)$ multiplied by the conjugate of $R_i'(\omega)$ for references i = 1 ... n,
- then the products $P_i(\omega)$ are normalized,
- then the inverse Fourier transform of all the products $P_i(\omega)$ is carried out and temporal functions $X_i(t)$ are obtained,
- and the signal S(t) is attributed to an active zone ~~(10)~~ as a function of said temporal functions $X_i(t)$;
- the signal S(t) is attributed to an active zone as a function of the maximal values of said temporal functions $X_i(t)$.

KAM 1/16/08

On page 6, please insert the following before the paragraph beginning "In the drawings" on page 6, line 27, of the specification:

BRIEF DESCRIPTION OF THE DRAWINGS

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KAM 1/11/08

On page 7, please insert the following before the paragraph beginning "Figure 1 depicts" on page 7, line ~~19~~ 13, of the specification:

DESCRIPTION OF PREFERRED EMBODIMENTS

KAM 1/11/08

On page ~~13~~ 12, line ~~9~~ 26, please replace the paragraph beginning "As a more precise example" with the following amended paragraph:

As a more precise example, the following method can in particular be used to recognize the active zone 10 from which the sensed signal S(t) comes:

(1) after normalization of the sensed signal S(t) (for example S(t) is calibrated so that its energy is equal to 1), the signal S(t) generated by the sensor 6 is intercorrelated with the n predetermined signals also normalized from the library, denoted Ri(t) where i = 1..n. Functions Ci(t) are thus obtained that are the temporal results of the product of intercorrelation of the signal S(t) respectively with the signals Ri(t) from the library. Based on these computations is determined a potentially activated active zone j ~~corresponds~~ corresponding to the result of intercorrelation Cj(t) having a maximum amplitude greater than those of the other results Ci(t).

(2) The distribution D(i) of the amplitude maxima of the intercorrelation results is also determined:

~~D(i) = Max((Ci(t)) where i = 1..n.~~

D(i) = Max(Ci(t)) where i = 1..n.

(3) A second distribution function DN(i), obtained in the same manner as the computation of the function D(i) but replacing S(t) with Rj(t), is computed.

(4) An intercorrelation is carried out of the distributions of the amplitude maxima D(i) and DN(i). If the maximal amplitude E of the result of intercorrelation between D(i) and DN(i) is sufficient, then j is the considered number of the activated zone. Otherwise, the signal generated by the sensor corresponds to a false alarm.

KAM 1/11/08

On page 15, line 27, please replace the paragraph beginning "As a nonlimiting example" with the following amended paragraph:

As a nonlimiting example, a 16-bit code can be determined from the sensed signal S(t) in the following manner:

- the first 8 bits of the code are determined from the frequency spectrum of the signal S(t) that is subdivided into 8 predetermined frequency tranches $[f_k, f_{k+1}]$, k=1..8: the bit of rank k is equal to 1 for example if the final energy value given by the spectrum at frequency f_{k+1} is greater than the average energy value of the acoustic wave in the frequency ~~tranche~~ tranches $[f_k, f_{k+1}]$ and this bit is 0 otherwise;
- the last 8 bits of the code are determined from the temporal signal S(t) that is subdivided into 9 predetermined temporal tranches $[t_k, t_{k+1}]$, k=1..9: the bit of rank k+8 is equal to 1 for example if the average value of the signal power during the period $[t_k, t_{k+1}]$ is greater than the average value of the signal power during the period $[t_{k+1}, t_{k+2}]$, k=1..8, and this bit is 0 otherwise.

On page 21, line 8, please replace the paragraph beginning "When the abovementioned theoretical" with the following amended paragraph:

When the abovementioned theoretical resemblance functions Rth have been determined, when seeking to determine the position of an impact I between four adjacent active zones R1-R4 (advantageously point-like), this position can for example be determined by an iterative optimization process by minimizing a function of error between the values D(i) previously defined ~~(D(i)=Max(Ci(t))~~ D(i) = Max(Ci(t)), with i here being the number of the reference active zone Ri in question) and the values of theoretical resemblance Rth(I, Ri). For example, a function of error E equal to the sum of the values $(D(i)-Rth(I, Ri))^2$ can be minimized.